JOHN J. RILEY COMPANY

LEATHER MANUFACTURERS EST. 1910

228 SALEM STREET
P.O. BOX 316
WOBURN, MA 01801

TEL. (617) 933-5900

May 24, 1983

Mr. Robert Cleary
Department of Environmental Quality Engineering
Division of Hazardous Waste
One Winter Street,
Boston, Ma. 02108

Dear Mr. Cleary,

With reference to our phone conversation today, we are enclosing a copy of an analytical report by Cambridge Analytical Associates on our catch basin sludge.

The samples represent a composite of two specimens drawn from sludge that had been deposited on the land immediately behind the catch basin. One specimen was from "fresh" material, having been put on the land about one month prior to the sampling date. The other specimen was from "old" material which had been there approximately one year. Both specimens were drawn from a locus twelve inches below the surface, and transferred to a sterilized jar. The sampling was done April 7, 1983 and the sample delivered to Cambridge Analytical that day.

We had several tests performed on this sample. The results of the EP Toxicity test, which you are interested in, are detailed in Table 2. Do not confuse the results of the bulk analysis (Table 3) with the above.

If you need additional information or data, please advise.

Sincerely yours,
JOHN J. RILEY CO., INC.

Richard N. Jones

RNJ:nd
enclosure

FORMAL REPORT OF ANALYSIS

CATCH BASIN SLUDGE

PREPARED FOR: John J. Riley Co.
228 Salem Street
Woburn, Massachusetts 01901

Attn: Dick Jones

CUSTOMER ORDER NUMBER: J-187

CAMBRIDGE ANALYTICAL ASSOCIATES, INC.

REPORT NUMBER: 83-267

DATE PREPARED: April 26, 1983
DATE SAMPLED: April 7, 1983

IDENTIFICATION: A Composite of two samples collected from hill at back of catch basin at a depth of 12". One sample was of "fresh" material and the other of "old" material.

TABLE OF CONTENTS

1. INTRODUCTION

This report summarizes results of chemical analyses performed on samples received by CAA on April 8, 1983. Analytical methods employed for these analyses are described in Section 2 and results are presented in Section 3. The last section contains quality control data and certifications supporting the analytical results.

2. ANALYTICAL METHODS

Analytical methods utilized for instrumental and colorimetric analysis are summarized in Table 1. For bulk analysis, total chromium was determined by atomic absorption spectrophotometry. Hexavalent chromium was determined colorimetrically following extraction with distilled water.

3. RESULTS

Results of analyses are presented in Table 2 and 3.

Table 1. Summary of Analytical Methods

Constituent	Method Reference	Method Description
Extraction	1	EP Test
Arsenic(As)	Method 206.2[2]	Atomic Absorption Spectrophotometry
Barium(Ba)	" 208.1[2]	Atomic Absorption Spectrophotometry
Cadmium(Cd)	" 213.1[2]	Atomic Absorption Spectrophotometry
Chromium(Cr)		
-total	" 218.1[2]	Atomic Absorption Spectrophotometry
-hexavalent	" 307B[3]	Colorimetric
Lead(Pb)	" 239.1[2]	Atomic Absorption Spectrophotometry
Mercury(Hg)	" 245.1[2]	Atomic Absorption Spectrophotometry
Selenium(Se)	" 270.2[2]	Atomic Absorption Spectrophotometry
Silver(Ag)	" 272.1[2]	Atomic Absorption Spectrophotometry

(1) U.S. EPA 1980. Hazardous waste and consolidated permit regulations - Appendix II - EP Toxicity test procedure. Federal Register 45(98): 33127-33128.

(2) U.S. EPA 1979. Methods for Chemical Analysis of Water and Waste. EPA 600/4-79-020. EPA/EMSL, Cincinnati, Ohio.

(3) APHA. 1975. Standards Methods for the Examination of Water and Wastewater. 14th edition. APHA, Washington, D.C.

Table 2. Results of Analyses of EP Extract

Constituent	Maximum Contamination Level	CONCENTRATION in EP Extract: Sludge Sample (CAA#83-4076)[1]	CONCENTRATION in EP Extract: Blank
Metals (mg/l)			
Arsenic	5.0	<0.01;<0.01	0.01
Barium	100	<1.25;<1.25	<0.2
Cadmium	1.0	<0.01;<0.01	<0.01
Chromium			
-total	5.0	2.3;2.2	<0.01
-hexavalent	5.0	<0.1;<0.1	<0.1
Lead	5.0	<0.05;<0.05	<0.05
Mercury	0.2	<0.0005;<0.0005	<0.0005
Selenium	1.0	<0.15;<0.15	<0.01
Silver	5.0	<0.02;<0.02	<0.02

1 Duplicate analyses performed.

Table 3. Results of Bulk Analyses

Client ID	CAA ID	Concentration (a)		
		Total Chromium (wt%)	Hexavalent Chromium (ppm)	Moisture (wt%)
Sludge sample	83-4076	1.39;1.61	<1.4	68.1

(a) All concentrations are on a dry weight basis.

Note: pH of sludge during EP extraction procedure (after addition of deionized water and prior to acidification w/ 0.5N acetic acid) was 8.4.

Table 4. Quality Control Data - Spike Recoveries

Element	Client ID	CAA ID	Concentration(ppm) Theoretical Value	Observed Value	Recovery %
As	Sludge sample	83-4076 EP	0.050	0.049	98
	"	4076 dupe	0.050	0.049	98
Ba	"	83-4076 EP	1.0	0.86	86
Cd	"	83-4076 EP	0.5	0.5	100
	"	4076 dupe	0.5	0.5	100
Cr - total		83-4076 EP	0.70	0.68	97
	"	4076 dupe	0.69	0.68	99
	"	4076 Bulk	1.13	1.15	102
Pb	"	83-4076 EP	2.5	2.7	106
	"	4076 dupe	2.5	2.5	100
Hg	"	83-4076 EP	0.025	0.028	112
	"	4076 dupe	0.025	0.024	96
Se	"	83-4076 EP	0.05	0.03	60
Ag	"	83-4076 EP	0.53	0.50	96
	"	4076 dupe	0.53	0.53	100
Cr - hexavalent	"	83-4076 EP	0.50	0.33	66
	"	4076 bulk	0.50	0.35	70

4. QUALITY ASSURANCE DOCUMENTATION

4.1 Quality Control Data

Quality control data associated with these analyses are summarized in Table 4. These results consist of recoveries of spikes from analyte solutions.

4.2 Certification

This work has been checked for accuracy by the following staff personnel:

Director, Inorganic
Chemistry Laboratory

Keith A. Hausknecht

Keith A. Hausknecht

Quality Assurance
Administrator

Leanne Schwamb

D.E.Q.E.
Inspection

Trip Summary Sheet

Facility Name John J. Riley, Co.

Location 228 Salem St.
Woburn, MA.

Contact People Jack Riley - owner.
Dick Jones - chemist

Phone Number 933-5900

D.E.Q.E. License No. None

E.P.A. I.D. No. MAD001035872

Inspection Date 4/6/83

Inspectors
R. Cleary
H. Waldorf

In Compliance?
_____ yes _____ No

I. Facility Type and Process Description Gen., Tr., TSD

This facility processes cattle hides into finished leather, on a contract basis. Riley's customers are primarily manufacturers of shoes, belts and personal goods. This plant operates on a staggered shifts 5 AM to 9 PM. Since tannery wastes were delisted by the EPA in 1981 and are no longer considered hazardous wastes, this company may apply to the Department to be taken off the hazardous waste generator list. A tour of the plant revealed several issues of concern with regard to the Woburn project. Unit processes observed during this inspection, along with raw materials used, are summarized as follows:

John J. Riley Tannery, Woburn
Summary Matrix of Unit Processing of Cattle Hides

Unit Process	Raw Materials and Storage Location	Wastes Discharged
A. Fleshing	Mechanical	Wastewater to settling basin grease to rendering tank-recycled.
B. Beamhouse - Paddle Mixers		Wastewater to settling basin
1. Soaking	"Triton-N101", Phenolic detergent-inside tank	
2. Dehairing and Reliming	Lime in bags inside Sodium hydrosulfide-drums outside.	
C. Tanning-rotating mills		Wastewater to settling basin
1. Bating	Sodium fromate - bags inside, formic acid drums outside. Ammonium sulfates, "Tamol F" (a synthetic tanning agent containing naphthalene sulfonic acid), Oropon (a proprietary protein enzyme)-bags inside.	
2. Pickling	Brine (conc.NaCl) and sulfluric acid-tanks inside.	
3. Tanning	Chromium sulfate chrome liquor-drums inside, Sodium bicarbonate bags inside.	
D. Color Mills		Wastewater to settling basin
1. Retan	Acrylics and proprietary compounds-drums inside (No Cr compounds)	
2. Coloring	Anilinedyes - drums inside	
3. Fat liquoring	Oils, emulsifiers, sulfates-drums inside. "Mardol" oil - tank inside Clay and flour fillers - bags inside.	

Unit Process	Raw Materials and Storage Location	Wastes Discharged
E. Pasting, washing and drying	Alkaline, cellulose paste solution - drums inside	Wastewater to settling basin.
F. Stretching	"Mardol" oil - inside drums "Isopar1" aliphilic hydrocarbon - (parrifin) drums inside.	No wastewater.
G. Buffing	Mechanical process.	Chrome leather dust to cyclone collector and water spray. Buffing sludge to drying bed.
H. Finishing Operations		
1. Seasoning - 2. Laquering, - coating and filming	Various waterbased mixtures Rotary spray	Water curtain spray waste water to settling basin. Paper filter to trash.

Process uses various compounds, depending on product type, all stored inside in 55 gallon drums, most are blended dressings:

Types of Coating	Types of Solvents
Nitrocellulose and polyurethane laquers. Water dispersable resins, acrylonitrile pigment: carboxybutadieneacrylonitrile, carboxybutadiene acrylonitrile-styrene, carboxybutadiene acrylo nitrile-acrylic	diisobutylketone "methylcellusolve" or "T-235" (ethylene glycol monoethyl ether) "butylcellusolve" (ethylene glycol monobutyl ether) butylacetate tributylphosphate diisobutyl acetone

III. Inspection Discussion

A. Wastewater

1. Wastewater from most unit processes flows to a common settling basin where some settling and solids removal occurs. The largest volume of the 350,000 GPD flow is from the beamhouse, tanning, and color mill operation.

2. The MDC, under current litigation, will require further treatment. Mr. Jones and Mr. Riley indicated they had hired an engineer to cost-out wastewater treatment upgrading including pH control, chromium removal, oil and grease removal and sulfides reduction.

B. Sludge Management

1. Sludges, which are the skimmings and bottom solids from the waste water catch basin are being stockpiled onsite, on an embankment above the railroad track and the company's well house. This stockpile is not covered in any way. Some erosion of the stockpiled sludge is occurring down to the railroad drainage ditch. This drainage flows south to the wetlands upstream of Whittenmore Pond. This condition appears to be a violation of the Mass. Clean Waters Act (Chap. 21, Section 43) and the Solid Waste Disposal Act (Chap. III, Section 150 A).

2. Buffing dust sludges (see section E.2) are stockpiled at the northwest corner of the drying building. There was no evidence that this was causing water or air pollution, but considering the particle sizes these sludges could cause an air pollution problem if allowed to dry out. This does appear to be a violation of the Solid Waste Disposal Act.

3. Waste water treatment sludges and buffing dust sludges from tanneries were taken off the list of hazardous wastes by EPA. Therefore, these are not categorically hazardous wastes, but they must still be tested for the characteristics of hazardous waste on a case by case basis. The only hazardous characteristics that these waste streams are likely to exhibit, according to EPA, are EP Toxicity (Cr^{+6}, Cd) and reactivity (evolution of H_2S gas).

   Mr. Riley showed us laboratory data for EP Toxicity that indicate that the wastes are non-hazardous, but he would not provide copies of any data because of the current litigation with Woburn parents of leukemia victims.

4. Past sludge disposal practices have consisted of burial of dry and semiliquid sludges on the northern portion of the property. Two old sludge lagoons and burial areas, approximately 1/4 acre in size were viewed during the inspection. One is approximately 1/2 full of water, of unknown depth. The other is a depression which is dry and vegetated, other than two "puddles" of whitish green liquid. Mr. Jones stated these old lagoons had been tested for organics two years ago and none were detected.

5. Mr. Riley declined to provide copies of the sludge and well test results due to a pending lawsuit.

6. Department Policy on Sludge: The Department is authorized by the Massachusetts Clean Waters Act by MGL Chapter 21 Section 26-53 to regulate or prohibit discharge of pollutant to ground or surface waters without a valid permit. Mass. G.L. Chapter 83 section 7 authorizes the Department to order a sewage treatment plant to improve its works or operation in order to prevent or abate water pollution. In so far as the Riley Tannery is permitted to discharge to the MDC sewer system, and is operating their catch basin "treatment works" to remove solids, they should fall within the perview of the above section.

7. It appears, from information provided by the company, that sludge being stockpiled and disposed of on-site is a non-hazardous industrial sludge. However, this facility should be required by the Department to provide documentation that the sludge generated exibits none of the characteristics of a hazardous waste, as defined in 310 CMR 30.120. In particular: the company should show the department evidence that the sludge will not generate toxic gases, as described in 310 CMR 30.124(e); and that the sludge does not contain the following EP Toxic materials in excess of the concentrations described in 310 CMR 30.125:

   Cadmium,
   Chromium in the hexavalent form $Cr^{+}6$ and
   Lead.

   In view of the previous contamination of nearby wells with halogenated solvents, it is suggested that they be required to do a purgeable organics on their sludge.

8. It is recommended that Riley's be ordered by the Department to take the following actions:

   a. Submit plans for the control and collection of leachate from sludge stockpiling areas.
   b. Submit plans for the design and operation of sludge landfilling on-site, conforming to RCRA standards of 40 CFR 257. Alternatively, Riley's could either submit documentation of the acceptance of their sludge for off-site disposal or submit plans to the Department for land application of their sludge on site.

9. It is felt that the above recommendations conform closely to the most recent policy memorandum on the subject (Policy #17, 3/31/83) from the Division of Hazardous Waste.

C. Raw Materials:

1) The summary matrix of unit processes (section I) lists raw materials used by the Riley Tannery and their place of storage. These materials were either observed during this inspection or were stated verbally by Mr. Jones. Mr. Riley stated that he feels Riley has never used any "toxic" materials, except, "20 years ago, under a government contract, for leather to go to Vietnam."

2) The raw materials or derivatives discussed below are listed in 310 CMR 30.133 as "Hazardous Wastes which are discared commercial chemical products or OFF-specification batches of commercial chemical products or spill residues of either". It should be noted that these substances are considered hazardous only if discarded in their pure (or off-specification) commercial form. As such, these raw materials are not considered waste as they are currently being used by this facility. They are listed for background information only:

Raw Material	Waste listed in 310 CMR 30.133
Phenolic Detergents	Phenol U188 plus 11 other phenolic compounds
Aniline	Aniline U012
Formic Acid	Formic Acid U123
Acrylonitrile Pigments	Acrylonitrile U009

D. Process Water is supplied through 2 wells

1) Well #1, closest to the plant and west of the B&M tracks, is labeled well #439in the E&E Final report. It has exhibited low levels of cholorinated solvents compared with other contaminated wells. Mr. Jones indicated that when they have tested this well levels of the halogenated solvents have been at either low levels or non-detectable.

2) Their well #2, located east of the B&M tracks, is labeled well #6 in the E&E Final Report. Levels of halogenated solvents in this well were high, with trichloroethylene at 1372 ppb in 1981.

3) Mr. Jones stated that the process water supply, from the above 2 wells, was cross-connected with the city water supply up until 1980.

E. Air emmissions:

1) A recent air inspection report on this plant is included in the file. It contains more detailed information on VOC use. A small sample paint spray booth at the plant is stack vented. Total VOC emmission for all processes (i.e. evaporation), based on use in the air inspection report, are 82.57 tons/yr.

2) The buffing process vents leather dust to a cyclone collector with water sprays (see section B.3. concerning this sludge).

F. Property of Beatrice Foods East of B&M Tracks

1) The property is still owned by Beatrice Foods, however, Mr. Riley stated that John J. Riley Inc. still retain water rights to well #2 (E&E#6). It should be noted, for purposes of any future enforcement in this area, that Beatrice Foods sold the plant itself back to John J. Riley Co. in January 1983.

2) This property was the location of disposal of hazardous waste drums and "oily residues". Beatrice Foods was ordered to remove these wastes in October of 1980.

3) Based on an inspection of the property it appears that the area east of the MDC/Woburn sewer lines and closest to Whitney barrel has been recently disturbed by heavy equipment. Mr. Riley stated he had had some of the scrap metal and old drums removed. He also stated that the newly constructed fences near the well and at the Whitney property boundary were intended to prevent future access to this area from Salem St.

4) Scrap metal and rusting old drums and refuse are scattered throughout the property. A large pile of these (15 to 20) drums is located opposite the train "depot" at the Leachmere Warehouse. At the base of the sewer manhole in this area a small spot of oily, tarry residue was noted. No other distinctive oily residues or recently dumped refuse were observed on the site. No obvious vegetation stress was noted.

5) Owing to the age of these wastes, it will be difficult to determine the type, if any, of hazardous residues in and under the old drums. For this reason, it is suggested Beatrice Foods, be required to provide sample analysis from soils in this area, before any cleanup, to determine if they contain either EP Toxic wastes or any of the several halogenated solvents which have contaminated nearby wells. Based on the sample results, the Department can then decide on the specific requirements for the physical removal of these wastes by Beatrice Foods.

6) According to Mr. Riley, Beatrice Foods plans to donate this site to either the City of Woburn or a non-profit organization called "Wildlands" in the near future. A quick response to the situation on this site is advisable.

II. Summary of Violations or Deficiencies With References to Hazardous Waste Laws and Regulations.

A. No specific violations with reference to hazardous waste regulations at the John J. Riley Company were noted.

B. Beatrice Foods appears to be in violation of MGL c. 21C s. 5 which prohibits disposal of hazardous waste without a license. Under s. 9 of this chapter the Department may require the production or analysis of samples.

C. With reference to non-hazardous sludges, John J. Riley Co appears to be in violation of M.G.L. c. 24 section 43 which prohibits the discharge of pollutants to waters of the Commonwealth without a valid permit. Under M.G.L. c. 83 s. 7 the Department may order a sewage treatment plant to improve its operation to abate water pollution. The company also appears to be in violation of Chap. III, Section 150 A, of the Solid Waste Disposal Act.

III. Inspection Discussion

See sheets previous.

IV. Recommendations to Actions --See next page.

V. Hazardous Waste Profile

K054
K055
K056 Tannery Wastes - delisted in 1981
K057

IV. Recommendations to Actions

A. John J. Riley Co. would like to be removed from the list of hazardous waste generators. This should be allowed if the company provides analytical data showing that its sludge does not exhibit any characteristics of hazardous waste. The pertinent characteristics are EP Toxicity (Cr^{+6}, Cd, especially) and reactivity (evolution of H_2S gas.)

B. Beatrice Foods should be issued an order to investigate and clean up the parcel of land they own east of the Boston and Maine Railroad tracks.
EPA has recently issued an order to this effect under Section 3013 of RCRA.

C. John J. Riley Co. should be required to properly dispose of the sludge from its settling lagoon and its buffering dust collector. If, as seems likely, the sludge proves non-hazardous, the company has several options. They can send the sludge off site to an approved solid waste disposal facility. They can create an approved solid waste disposal facility on site. (The company may not need to get a site assignment because they have been disposing of this sludge on site for many years.) The third option is somewhat more complicated. DEQE/DHW Policy #17 (3/31/83), "Design and Operation of Sludge Landfills," classifies non-hazardous waste water treatment plant sludge as "sewage." making it subject to regulations under G.L. Chap. 21, Sections 26-53, which prohibits discharging of pollutants to ground or surface waters without a valid permit and under G.L. Chap 83, Section 7 which allows DEQE/DWPC to order sewage treatment plants to improve their works or operation to prevent or abate water pollution. Insofar as the Riley Tannery is permitted to discharge to the MDC sewer system and is operating their settling basin to remove solids, they should fall within the purview of this policy.

Whatever course the company chooses they should be required to document that leachate from the dewatering of their sludges is collected and controlled, and should they choose to operate a sludge landfill, it must conform to RCRA standards of 40 CFR 257.

D. In response to the company's request for information, they should be informed that the Department cannot provide confidentiality of data provided the Department to prove that a waste is non-hazardous. They should also be informed that 310 CMR 30.302 requires that the generator of a waste determine whether it is hazardous and that 310 CMR 30.061 requires generators of hazardous waste to notify the Department. In sum, the Department can and does require that the data be submitted and cannot keep that data confidential.

VI. Information Requests

A. Inspector from Industry

1) Previously issued (ID# MAD001035872. Mr. Jones requested this number so he could apply to have them removed from the generator's list.

2) If they submit test results on sludge & well now, will the Dept. protect their confidentiallity with regard to a pending lawsuit?

B. Industry from Inspector